

setting a supplying rate of silicon (Si) to NH₃ in a reaction chamber during said vapor phase epitaxy at a desired value in a range from 8.6×10^{-10} to 2.6×10^{-8} , so as to control conductivity (1/resistivity) of said gallium nitride group compound semiconductor at a desired value such that said conductivity increases with increasing of said supplying ratio.

55. (Amended) A method for producing a gallium nitride group compound semiconductor by an organometallic compound vapor phase epitaxy, comprising the steps of:

setting a supplying rate of silicon (Si) to gallium (Ga) in a reaction chamber during said vapor phase epitaxy at a desired value in a range from 0.1 to 3 as converted values so as to control a carrier concentration of said gallium nitride group compound semiconductor at a desired value such that said carrier concentration increases with increasing of said supplying ratio, where said values 0.1 and 3 are the values obtained from gas flow rates, in case that an amount of said gallium (Ga) is converted into a flow rate of hydrogen bubbling trimethyl gallium (TMG) at a temperature of -15°C and an amount of said silicon (Si) is converted into a flow rate of a gas diluted to 0.86 ppm.

56. (Amended) A method for producing a gallium nitride group compound semiconductor by an organometallic compound vapor phase epitaxy, comprising the steps of:

setting a supplying rate of silicon (Si) to NH₃ in a reaction chamber during said vapor phase epitaxy at a desired value in a range from 8.6×10^{-10} to 2.6×10^{-8} , so as to control a carrier concentration of said gallium nitride group compound semiconductor at a desired value such that said carrier concentration increases with increasing of said supplying ratio.

See the attached Appendix for the changes made to effect the above claims 53-56.